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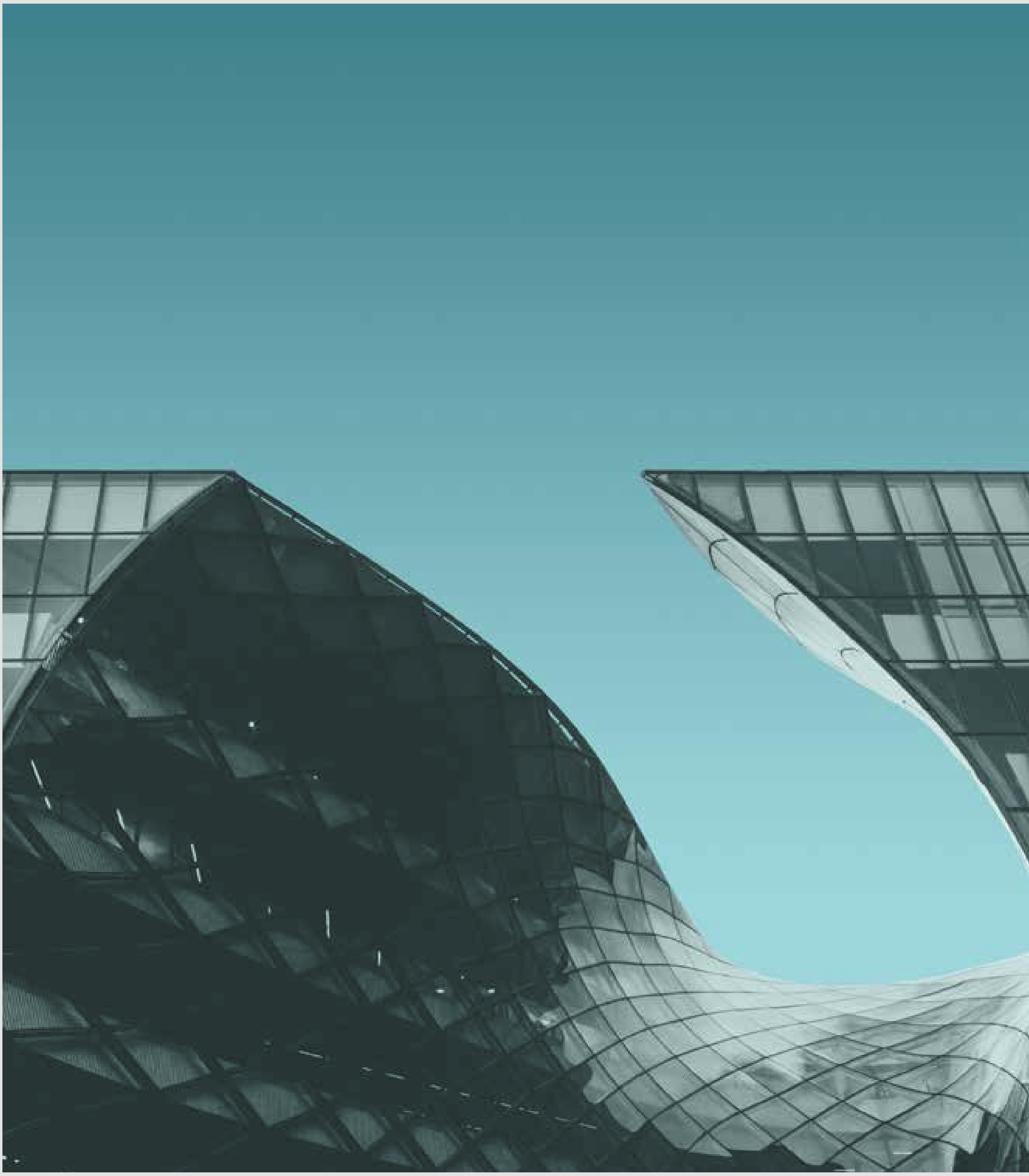
BENCHMARKING IN PRIVATE REAL ESTATE
BEYOND PERFORMANCE MEASUREMENT



MSCI REAL ESTATE RESEARCH

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FOREWORD

Private real estate has always been a relatively opaque asset class, and this has presented performance and risk measurement problems for investors and managers alike. In contrast to listed markets such as equities, which benefit from real time transaction data and perfectly defined markets, performance and risk analytics for private real estate portfolios rely on valuation data and sample-based benchmarks. The resulting limited transparency and inconsistent data have been particularly problematic for the asset class.

In the past, these difficulties, combined with the relatively modest role real estate once played in the wider portfolio, meant that sophisticated performance and risk analysis was often placed in the "too difficult" bucket.

However, allocations to real estate have been rising for the past few decades. And since the Global Financial Crisis, two things have happened:

> Benchmarking and the analytics it supports aid decisions and communication right across the investment process, from allocation to execution

The low interest rate environment has pushed yet more capital into real estate and there has been a growing realization that the asset class may be more correlated with the broader portfolio than previously thought. Real estate now has greater significance in the wider portfolio context but, as a result, it is also attracting far more scrutiny from asset allocators and risk managers. Real estate's growing role in the portfolio means its previous place in the "too difficult" bucket is increasingly untenable. Those responsible for the real estate allocation need to be able to describe the role it plays. To do this requires analysis relative to the broader market and the rest of the multi-asset portfolio, based on frequent data.

MSCI Real Estate has, for many decades, been at the forefront of efforts to bring greater transparency to the private real estate market, with a particular focus on investment returns and their drivers. The greatest inroads have been made in the core, open-ended part of the market where regular reporting is an essential operational requirement. Here, benchmarking and the analytics it supports aid decisions and communication right across the investment process, from allocation to execution.

We are increasingly seeing greater demand from the largest asset owners to extend this kind of analysis across their entire real estate portfolios to include even closed-end, opportunistic funds with absolute return targets. At the same time, managers are coming to appreciate the benefits of consistent measurement and analysis of risk and return across all the portfolios they run. A coherent benchmarking framework can aid a better understanding of the drivers of performance, allowing managers to be more informed when communicating with their clients, irrespective of the portfolio's structure or investment objectives.

MSCI is encouraged to see that the topic of benchmarking is rapidly climbing up the agendas of the world's largest investors and their managers. We see this trend in our interactions with clients on a daily basis, where the scope of discussions about benchmarking continues to broaden into all areas of real estate investment management.

While challenges remain in bringing the same sophistication of performance and risk analytics to private real estate as enjoyed by the other major asset classes, at MSCI we believe that benchmarks will play a central role in advancing the development of the asset class, helping our clients with many of the investment and risk problems that they encounter.

JAY MCNAMARA
Head of Real Estate, MSCI

INTRODUCTION

BENCHMARKING PLAYS AN IMPORTANT ROLE IN FINANCIAL MARKETS AND HAS BECOME INCREASINGLY IMPORTANT TO REAL ESTATE AS IT HAS EVOLVED AS AN ASSET CLASS

It may not be immediately apparent, but benchmarks are all around us. They help us frame our understanding of the world and make relative assessments. Whether it is describing the size of an aircraft carrier's deck in terms of the equivalent number of football fields, or comparing your neighbor's house to your own, benchmarks provide us with a reference point to make the intangible tangible and the means to make simple assessments of things that would otherwise be extremely hard to evaluate in an absolute sense. Without benchmarks, our ability to make quick and efficient decisions would be severely hampered.

BENCHMARKS PLAY A CENTRAL ROLE IN FINANCIAL MARKETS

Beyond simple, everyday comparisons, benchmarks also play a prominent role in financial markets. With vast sums invested in global capital markets, benchmarks help asset owners and asset managers better understand their portfolios' performance and so make better informed investment decisions. Financial benchmarks can perform many functions including defining opportunity sets, providing a yardstick to measure performance against, setting hurdle rates, guiding strategy, distinguishing active from passive returns, defining styles and providing market data.[1]

Financial benchmarks are numerous and exist for most asset classes, but are most widespread in public asset classes such as equities, where benchmarks including the MSCI ACWI index have become well established. For real estate, the intricacies of private markets and a heterogeneous and low liquidity investment landscape mean that there is additional complexity. Despite the challenges, the use of benchmarks in real estate has expanded considerably over recent decades, as investors grow to realize the value they can bring to the investment process.

INCREASINGLY SO IN PRIVATE REAL ESTATE

The increasing prominence of private real estate benchmarks can partly be attributed to advances in technology and greater availability of data, but real estate is also playing an increasingly prominent role in institutional portfolios. As allocations to real estate have grown over time and passive equity strategies have become more common, real estate has steadily accounted for a larger proportion of the typical multi-asset class portfolio's active risk budget, drawing increasing scrutiny from investors and driving the demand for greater transparency and more grounded insights into the asset class.

> Robust benchmarks can help real estate professionals achieve their objectives, whatever those objectives are

The push for transparency extends beyond simply wanting to know what is in the real estate portfolio. In addition to having a detailed understanding of exposures, there is a growing demand to better understand the actual drivers of risk and return. From high-level questions such as "how does real estate sit within the broader multi-asset class portfolio?" all the way down to "how do the physical characteristics and tenancy profiles of my assets drive performance?", the quest for greater understanding has largely put an end to the once pervasive set-and-forget mentality. This understanding can only be achieved with regular valuations to support analysis relative to the market.

COHERENT BENCHMARKING AIDS DECISION MAKING

A well-defined benchmark framework helps us understand the impacts of all key decisions, and recent advances in the asset class have seen benchmarking practice become much more sophisticated. Today, there is more choice than ever when it comes to benchmarking, making it a versatile tool for users across all parts of the investment process. Whether an investor or a manager, robust benchmarks can help real estate professionals achieve their objectives, whatever those objectives are.

To illustrate how benchmarks play a central part in the modern investment process as well as exploring some of the key challenges and issues they face, this paper is divided into four parts. In the first, we look at the wide range of objectives that can come with an allocation to real estate and see how benchmarking can support those objectives. The second part of the paper discusses benchmark selection. In the third section, we consider how users can get the most value from fully adopting real estate benchmarking methods. Finally, we conclude by reviewing questions around governance and regulation.

[1] Hammond, B. and Subramanian, R. (2013). "Building Best Practices Benchmarks for Global Equities." MSCI Research Insight.

EXECUTIVE SUMMARY

» It is human nature to make comparisons in trying to understand the world around us. Benchmarks are everywhere and help us to do this.

» Benchmarking plays an important role in financial markets and has become increasingly important to real estate as it has evolved as an asset class.

» Benchmarks help real estate investors achieve their objectives, irrespective of what those objectives are. Whether targeting a relative performance objective or an absolute level of return, benchmarking offers a powerful framework for helping to achieve long-term goals.

» Real estate benchmarks can come in a range of shapes and sizes to suit different uses. Careful consideration must therefore be given to design decisions when specifying benchmarks.

» Using well-specified, consistent and appropriate benchmarks at various levels of the investment process can make them powerful tools.

» Benchmarks can help clarify responsibilities and assist with governance through the investment process. For certain benchmarks, regulatory considerations may play an important role.

THE RELATIONSHIP BETWEEN INVESTMENT OBJECTIVES AND BENCHMARKS

BENCHMARKS HELP REAL ESTATE INVESTORS ACHIEVE THEIR OBJECTIVES, IRRESPECTIVE OF WHAT THOSE OBJECTIVES ARE - WHETHER TARGETING A RELATIVE PERFORMANCE PROFILE OR AN ABSOLUTE TARGET, BENCHMARKING OFFERS A POWERFUL FRAMEWORK FOR HELPING TO ACHIEVE LONG-TERM GOALS

Real estate is a complex asset class that demands a high degree of active asset management. Unlike equities, you cannot passively follow the market – every decision involves some form of active risk. The high degree of heterogeneity that exists at the asset level is also reflected at the investor level, with a wide range of potential objectives that may be sought from allocations to the asset class. Every investor potentially views their allocation to real estate differently, and they may well also seek different investment outcomes. These varying objectives can span long-term liability matching, inflation hedging, risk diversification, end-period wealth generation, return enhancement, active risk targeting, yield seeking and so on.

A DIVERSE RANGE OF INVESTMENT OBJECTIVES

The broad range of viewpoints on the potential role of real estate is partially due to its relative opacity as an asset class. Compared to equities and bonds, the amount of data available for real estate and the length of time over which it can be tracked is limited. This can make it challenging to form investment strategies, although advances in modelling have yielded some important insights in recent years. For instance, MSCI's modelling has shown that real estate performance is not bond-like.[1] Cash flows are not fixed and have proved to be more sensitive to economic growth than was often believed, which has important implications for the relevance of relative market analysis and benchmarking. Work of this sort has helped to refine and reshape some of the old approaches to real estate investment, but there remains considerable scope for differing interpretations, which contributes to the diversity we see in investors' objectives.

AN ABSOLUTE TARGET IS NOT A STRATEGY

Regardless of the expectations they have for their real estate investments, investors with a clear vision should be able to articulate a correspondingly clear real estate strategy, and this should then govern the decisions to be made at all levels of the investment process. This strategy must, in turn, be translated into specific and measurable risk/return requirements for the real estate portfolio. Well specified benchmarks can then be used as powerful tools to evaluate and monitor the strategy.

> Regardless of the expectations they have for their real estate investments, investors with a clear vision should be able to articulate a correspondingly clear real estate strategy

For example, a pension fund may target a simple absolute total return to help meet their long-term obligations. While this is a perfectly valid investment objective, it needs to be translated into a more specific strategy designed to meet the long-term objective. The strategy may be to target certain property types, geographies, investment styles, risk profiles, investment avenues or any number of other variables. This pension fund may have decided that their optimal strategy is to target value-add office investments in North America. By using appropriate benchmarks, this strategy can be measured and evaluated to ensure that it is delivering the expected return profile.

UNDERSTANDING STRATEGY AGAINST MARKET FLUCTUATIONS

Real estate is a cyclical asset class and all investments are subject to market risk. The investor's return in a given year might comfortably exceed a long-term absolute target, but this observation gives no insight on what has driven that performance, if it is sustainable and likely to persist, and whether the strategy they have adopted is working. If short-term targets are fixed and do not account for cyclical conditions, the incentive to maximize performance in a booming market or to minimize losses in a downturn could be lost. An awareness of the recent relative performance of your investments is crucial for understanding whether they are performing in line with your long-term objectives. Long-term performance is unlikely to be helped by short-term underperformance, and excessive risk taking could jeopardize the portfolio's chances of delivering on long-term objectives. Additional shorter term relative targets, designed to support the long-term objective, can therefore benefit the investor.

Thus, irrespective of the investor's ultimate objective, a strategy for achieving that objective will need to be put in place, and benchmarks are essential for understanding and evaluating those strategies against the normal fluctuations of property markets.

[1] Shepard, P. et al. (2015). "Is Real Estate Bond-Like." MSCI Research Insight.

BENCHMARKING FRAMEWORK

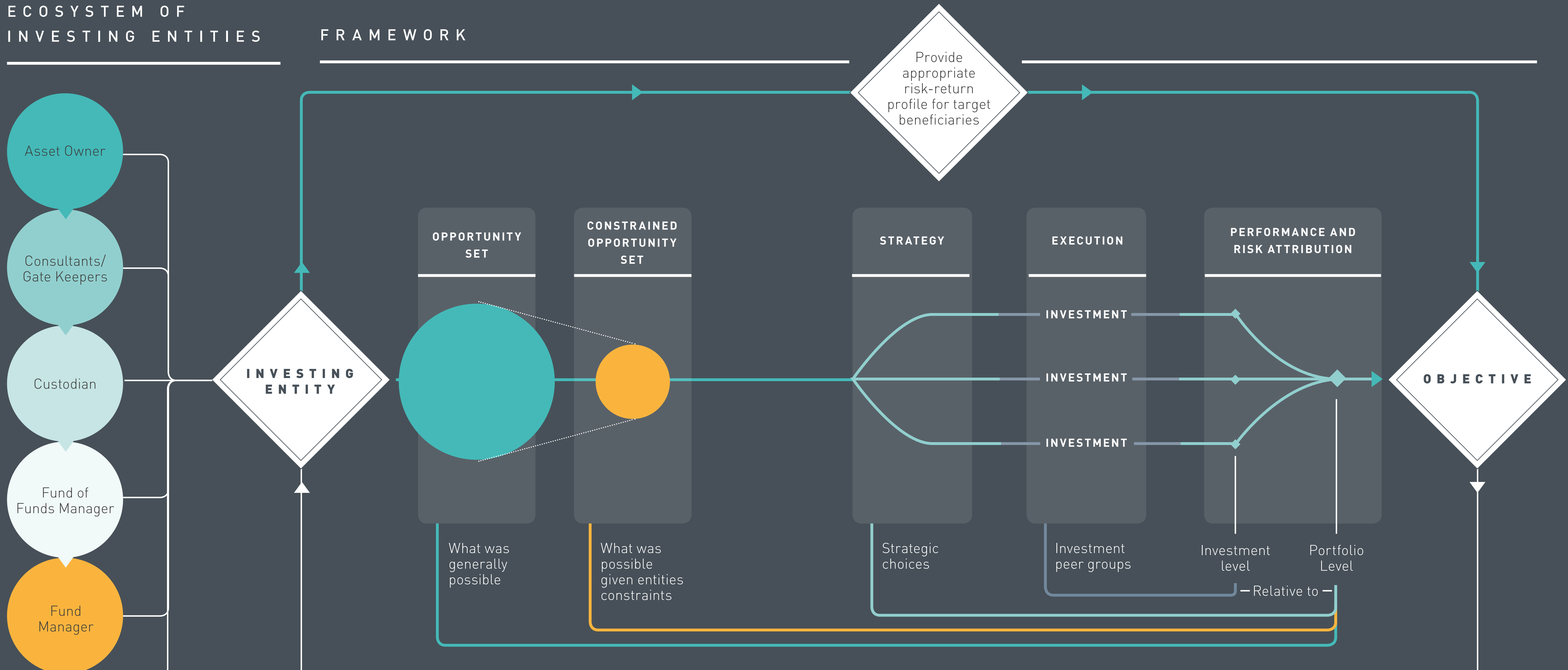
The benchmarking framework is relevant for each investing entity in the ecosystem.

Each investing entity may execute their strategy with a range of investments. For fund managers these may be individual properties. For an asset owner, these could be a number of funds or segregated mandates. Each investment may have its own benchmarking framework applied by the entity responsible for its management. As such the framework cascades consistently through the ecosystem of investing entities.

For a single investing entity to extract maximum value from the benchmarking framework, it must be applied at each subsequent level through the investment entities ecosystem to gain a full appreciation of how risks may concentrate and correlate across the wider portfolio.

ECOSYSTEM OF INVESTING ENTITIES

FRAMEWORK



BENCHMARK REVIEW

Feedback from analytics can lead to periodic official benchmark review.

UNOFFICIAL BENCHMARKING: PERFORMANCE AND RISK ANALYTICS

Irrespective of where the investing entity sits within the investment entities ecosystem or how the investment objective is expressed in the official benchmark, unofficial, relative-market or peer group benchmarking combined with associated analytics aides understanding of the drivers of risk and return to isolate the impacts of execution, strategic choices, constraints on opportunity set and the broad market opportunity set.

OFFICIAL BENCHMARKING

- Market index
- Absolute Return
- Inflation based
- ...others

BENCHMARK SELECTION

REAL ESTATE BENCHMARKS CAN COME IN A RANGE OF SHAPES AND SIZES TO SUIT DIFFERENT USES. CAREFUL CONSIDERATION MUST THEREFORE BE GIVEN TO DESIGN DECISIONS WHEN SELECTING BENCHMARKS

Most tools come in a range of shapes and sizes. From the more general-purpose monkey wrench to the spanner that only works with a highly specialized proprietary nut, there is a huge range of variation and customization. This is equally true for real estate benchmarks, where the range of potential designs can have an important impact on how appropriate the benchmark is for certain uses. It is therefore important to identify the right benchmark in each instance. This can vary depending on the use and user of the benchmark.

BENCHMARK ALIGNMENT ACROSS THE INVESTMENT PROCESS

As we have previously noted, real estate is a complex asset class that demands a great deal of active management. The investment process is multi-layered and involves a broad range of parties including asset owners, gatekeepers, custodians, consultants, fund managers and property managers. Benchmarks also have a wide range of potential uses, serving different purposes at different levels in the investment process, depending on whether they are being used to monitor, constrain, explain, reward, inform, or govern (see below table for some examples of potential uses). Wherever benchmarks are being used, they should therefore be appropriately specified to ensure that they are as effective as they can be. Misalignment is a significant risk when using real estate benchmarks, so this area deserves careful consideration when selecting a benchmark[1]

BENCHMARKS AT DIFFERENT INVESTMENT LEVELS

One of the most basic distinctions between real estate benchmarks is the investment level at which the benchmark is specified. Some benchmarks are specified at the fund level, others at the asset level, and some are even specified at the tenancy level. Fund-level benchmarks are the most all-encompassing as they incorporate not just the performance of the underlying property assets but also include additional balance sheet items such as indirect real estate investments, debt, cash balances, swaps and hedges, and fees. These other exposures can all contribute to the risk and return profile, so they form an integral part of fund-level benchmarks. Asset-level benchmarks focus only on the underlying property portfolio and are therefore employed in a different fashion, as they deal exclusively with property exposures and their performance consequences.

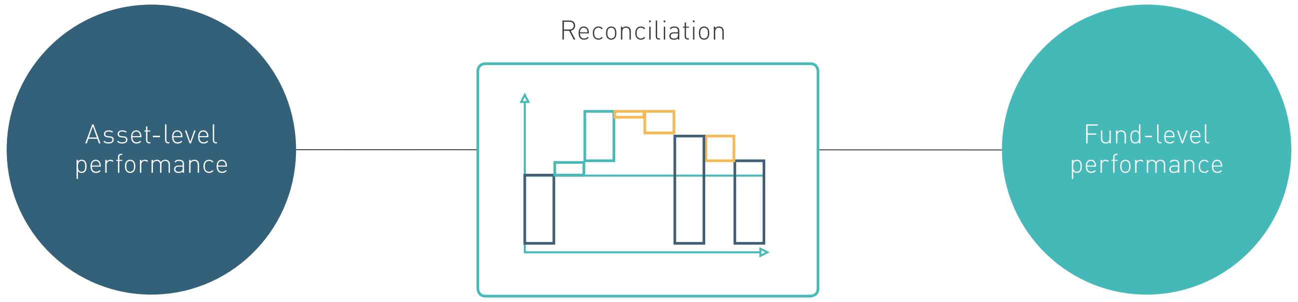
Where there exists both a fund-level index and an asset-level index covering the properties held in those funds, it becomes possible to add an additional layer of analysis. Fund-level returns are typically driven by the performance of the underlying assets, but a full reconciliation between fund and asset-level performance makes it possible to explore the relationship in much greater detail. As such, reconciliation can add another powerful dimension to the benchmarking process.

[1]Hobbs, P. et al. (2014). "The Asset Owner Real Estate Investment Process: Risk Management Insights from the MSCI/IPD survey." MSCI Research Insight.

EXAMPLES OF DIFFERENT BENCHMARK USES

BENCHMARK ROLE	EXAMPLE USE
Monitor	Observe or track performance
Constrain	Articulate limits to an investable universe or set a target style
Explain	Understand performance and risk drivers
Reward	Set formal performance targets
Inform	Communicate strategy and results to clients
Govern	Define responsibilities

RECONCILIATION ANALYSIS IS THE BRIDGE BETWEEN FUND-LEVEL AND ASSET-LEVEL PERFORMANCE



BENCHMARK SCOPE

Whether a benchmark is at the fund or asset level, there are important choices to be made around what to include. Broad market benchmarks may give the widest possible overview of the market and be useful for understanding market movements. However, in other cases it may be more appropriate for benchmarks to be aligned to a specific investable universe, peer group, opportunity set, desired risk profile, or mandate. Achieving this means specifying inclusion or exclusion parameters for the benchmark, where assets or funds are filtered based on variables such as geographic exposure, investment size bands, asset types, fund types and so on. In some cases, reweighting or currency adjustments can also be employed to tailor a benchmark to specific uses.

Decisions about benchmark specification can be very particular to the user and use case, and there are situations where using multiple benchmarks can make sense. For example, we can take the hypothetical example of an asset owner who has various investments in global property, including a mandate to a specialist manager to invest in U.K. office assets. From the investor's perspective, the monitoring and evaluation of their own strategy may be best served by using a broad global benchmark that accurately captures their investment opportunity set. By tracking their exposures and the performance of their aggregated investments against this broad benchmark, the investor can monitor and evaluate the efficacy of their strategy.

By contrast, it may not make a lot of sense to evaluate the performance of the U.K. office mandate against a broad global benchmark. As the manager cannot acquire assets outside the U.K. office sector, it would be pointless to assess performance deviations against this broad benchmark and much more effective to set a market benchmark that matched the mandate. That said, the mandated manager is probably also competing for capital against other specialist and diversified funds, so they may track their own performance against a broader benchmark in order to better understand and communicate their own strengths. Given the vast range of choices that can be made when choosing real estate benchmarks, it is vital to ensure that they are appropriate and aligned with both the use and user.

ELEMENTS TO CONSIDER IN BENCHMARK CONSTRUCTION

USER	USE	LEVEL	COMPOSITION	CONSTRUCTION
Asset owner	Define opportunity set	Asset-level	Property types	Weighting
Gatekeeper	Define style	Fund-level	Location	Frequency
Consultant	Monitor performance	Tenancy-level	Size bandings	Currency
Custodian	Understand drivers	Other	Opportunity set	Time vs money weighted
Fund Manager	Set targets		Peer group	Frozen vs unfrozen
JV Partner	Inform strategy		Other	Other
Other	Assign responsibilities			
	Fee hurdle			
	Other			

SUPPORTING BENCHMARK DESIGN

Beyond design, robust benchmarking needs to be supported by best practice in several critical areas.[1] These include index governance, methodology, data quality and transparency, which help to ensure that the benchmarks are accurate, objective, current, reliable, fair and cost-effective.

Good benchmark design needs to be supported by independent measurement, quality assurance and other aspects of governance that are not only designed to ensure benchmark quality but also independence from inappropriate influence. Benchmarks need to be based on a logical set of rules applied consistently to high-quality data, with a continuous and consistent approach over time to provide stability and predictability. Transparency is an important attribute, so a benchmark, its governance, and its methodology should all be established, documented and clear.

> It is vital to ensure that design decisions are appropriate and aligned with both the use and user

Over time, change is inevitable, so innovation and support must also be built into the benchmark process and structure – without it, benchmarks can become obsolete.

Many of these best practices are common to other, more established asset classes like equities. However, the unique nature of private real estate means that special consideration must be given to several issues. For example, a real estate benchmark will not be as investable as an equity index. Like some fixed income indexes, it is not possible or practical to hold all the constituents. The need to use private market data also places limitations on the frequency and timeliness of private real estate benchmarks and requires considerable investment in data collection and processing. These considerations differentiate private real estate benchmarks, but they also reinforce the importance of best practice in areas such as governance, methodology, data quality and transparency.

[1] Hammond, B. and Subramanian, R. (2013). "Building Best Practices Benchmarks for Global Equities." MSCI Research Insight.

GETTING BEST VALUE FROM BENCHMARKS IN USE

USING WELL-SPECIFIED, CONSISTENT AND APPROPRIATE BENCHMARKS AT VARIOUS LEVELS OF THE INVESTMENT PROCESS CAN MAKE BENCHMARKING AND THE ASSOCIATED ANALYTICS A POWERFUL TOOLBOX

A benchmark can be a useful information tool in its own right, but its real value comes when it is used for relative analysis. For instance, by comparing a portfolio with an appropriate benchmark, it becomes possible for an investor to calculate relative performance measures and gain greater insights into its performance. This process of relative benchmarking involves a simple but precisely defined comparison of composition and performance that can add considerable value to the process of investment management.

EVERYTHING IS RELATIVE

Relative returns identify whether investments have out or under-performed the benchmark. The relative return is sometimes referred to as the active return of the portfolio, as it is idiosyncratic to the portfolio, and can be broken down in several ways. Relative performance does not only have to compare single point estimates – in a heterogeneous asset class such as real estate, the dispersion of returns (both relative and absolute) can also provide substantial and useful context. Additionally, to understand what has driven a portfolio's relative return, the contribution of individual assets, activities (e.g., sales, purchases, held assets, developments) or segments can be analyzed. While investors and managers are generally looking to achieve strong positive relative returns, stability of the relative return can also be an investment aim.

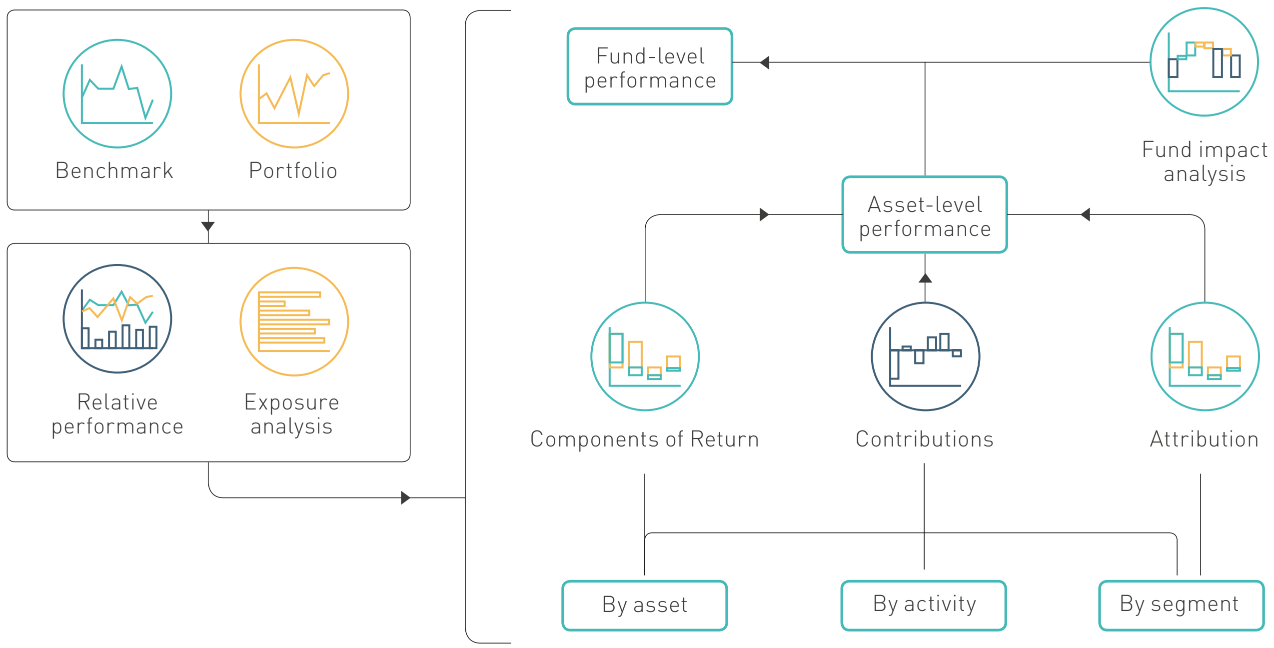
Relative returns provide context for positioning the performance of investments, but to gain additional insights it is necessary to look at segment breakdowns of the portfolio and the benchmark. By segmenting the benchmark and the reference portfolio into a series of matching and meaningful segments, it becomes possible for investors to conduct exposure analysis and identify the active weights in the portfolio. In other words, relative to the benchmark, are your allocations skewed toward certain segments, are you over or underweight to particular parts of the market? In cases where a benchmark has been designed to define an investment style, large deviations in segment weightings may be viewed as undesirable. However, in situations where the benchmark is being used to highlight the differentiation in a portfolio, a mismatch in segment weights becomes an illustration of the investment strategy.

> Mutual agreement on benchmark choice and active risk tolerance is an important part of the investment process, and should be carefully considered when setting benchmarks, performance targets and fee structures

BENCHMARKS DON'T DESCRIBE MANDATES BY THEMSELVES

It is sometimes argued that benchmarks encourage benchmark hugging and discourage more active strategies that deviate from the benchmark weights. However, it is not usually the benchmark itself that causes this behavior, but rather the way it is being used or the incentive structures set up around it. Asset owners can grant portfolio managers the freedom to construct portfolios that differ considerably from the benchmark. mutual agreement between manager and client on benchmark choice and active risk tolerance is an important part of the investment process, and should be carefully considered when choosing benchmarks, performance targets and fee structures.

RELATIVE BENCHMARKING ENABLES DETAILED PERFORMANCE ANALYSIS



THE POWER OF ATTRIBUTION

By combining allocation weights with relative returns it becomes possible to employ additional metrics that help us identify what has driven relative performance. Attribution analysis is an attempt to understand the drivers of investment performance and identify how much of the relative return is due to segment allocations and how much to stock selection.[1] Positive allocation scores mean that the portfolio has been weighted toward stronger performing segments of the market rather than weaker ones. Selection scores indicate whether, within segments, individual assets/investments have performed well.

By looking at the breakdown of relative returns between allocation and selection scores, it should be possible to evaluate which parts of the investment process need to be improved. For example, if a portfolio has under-performed against the benchmark due to negative allocation scores but has positive selection scores, this may suggest that the individual assets within the portfolio have generally been well selected but that the allocation strategy may need to be revisited. Similarly, exposure to the right segments might have helped a portfolio achieve out-performance, while negative selection scores indicate that the investment review process could be improved.

ATTRIBUTION AIDES COMMUNICATION

In addition to helping you understand the performance of your own portfolios, these relative performance metrics can become powerful communication tools. As all real estate investments generate some element of active risk and return, it is vital that each portfolio's "active story" is well understood and communicated. In isolation, relative performance analysis can be helpful, but the real estate investment process is complex and it is necessary for this sort of analysis to be built into a wider conversation. Consistent data used right across the investment process, with appropriate analytical tools employed at each stage, helps all parties extract maximum value from benchmarking and simplifies communication. A broadly shared understanding of overall investment aims, coupled with clear and transparent benchmarks, can enhance the value of benchmarks and help users derive maximum value from them.

THE EXPANDING POTENTIAL OF BENCHMARKS

Today there exists a previously unparalleled flexibility for users of benchmarks to define the segmentations most relevant to specific uses cases, which can enhance the richness of analysis. As data availability improves year-on-year, there is the potential to perform such analysis along an ever-expanding set of risk dimensions. And as benchmarking practice continues to evolve, the ability to further interrogate relative returns and investigate the drivers of returns will grow.

[1]See Mansell, G. (2013). "Private Real Estate: From Asset Class to Asset." MSCI Research Insight for a discussion of how the proportion of active risk that can be driven by the market and the proportion that can be driven by asset-specific factors, for an average-sized portfolio.

GOVERNANCE AND REGULATION

BENCHMARKS CAN HELP CLARIFY RESPONSIBILITIES AND ASSIST WITH GOVERNANCE THROUGH THE INVESTMENT PROCESS. FOR CERTAIN BENCHMARKS, REGULATORY CONSIDERATIONS MAY PLAY AN IMPORTANT ROLE

The translation of broad investment objectives into an asset management process yielding a standardized, transparent and comprehensive record of its key targeted results has for many years required the close collaboration of owners, managers and measurers. The bottom line aim of this three-way collaboration has been to achieve well informed and realistically targeted results within a broad framework of responsible and self-imposed operational governance.

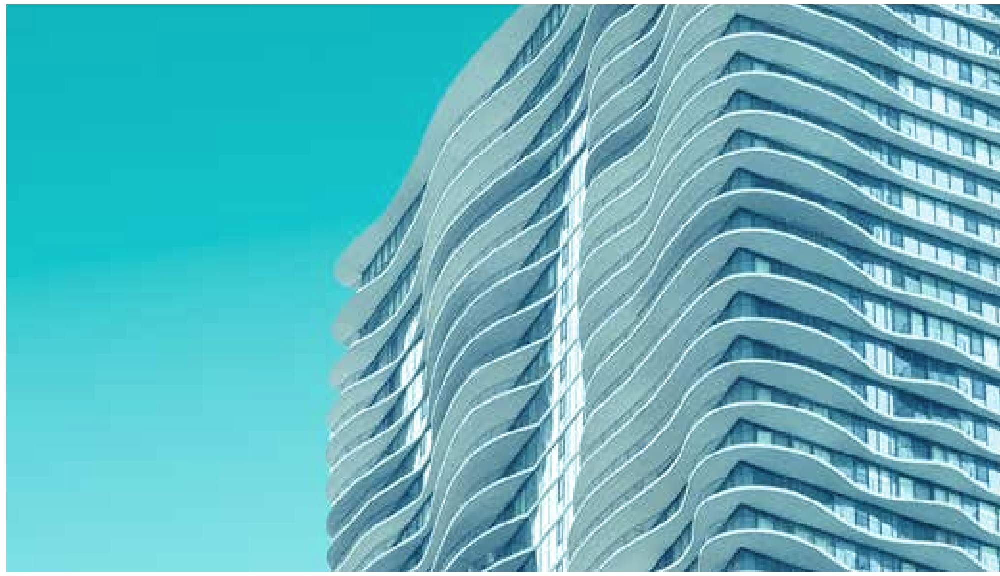
FORMAL REGULATION

Since the Global Financial Crisis, this industry-driven development has been required to nest within a broader framework of benchmark regulation. This kicked off with the IOSCO Principles for Financial Benchmarks published in July 2013, and other related regional and national initiatives have followed.

Much of the guidance contained in the 19 IOSCO principles has already been incorporated within real estate investment sector reporting processes. A tougher statutory approach, adopted by the European Union, does however impose a number of specific additional constraints and obligations upon real estate managers, data suppliers and index administrators, and whilst these obligations do not extend radically beyond the original IOSCO guidance, the statutory imposition of sanctions clearly raises the costs of compliance.

As benchmark regulation becomes a key part of the infrastructure of real estate investment measurement and oversight, so investors and managers will begin to appreciate the potential value of the consistent adoption and transparent execution of governance principles of the sort articulated by IOSCO.

> "Investors and managers will begin to appreciate the potential value of the consistent adoption and transparent execution of governance principles"



CONCLUSIONS

With over USD 8 trillion worth of institutional grade commercial real estate in the world, real estate is a rapidly growing and important part of the investment landscape.[1] However, as a previously opaque, illiquid and heterogeneous asset class, its investment management has not always been easy.

Benchmarks have long been part of the fabric of the asset class, but they now have the potential to make an even greater contribution than ever before. Benchmarks are extremely powerful, particularly when combined with appropriate analytical tools and applied consistently within a coherent framework that spans the entire investment process.

Such a sophisticated approach to benchmarking can help investors achieve their objectives, no matter what those objectives are. To capture this upside, however, it is critically important for users to understand how benchmarks can be best designed and most effectively employed, in the context of a fast-evolving framework of governance, including the introduction of statutory regulation.

[1]Teuben, B. and Bothra, H. (2018). "Real Estate Market Size 2017." MSCI Research Paper.

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